

ABSTRACT OF THE DISCLOSURE

A vertical routing structure inside a substrate for connecting a pair of trace lines electrically. The trace lines are positioned on the top and bottom surface of a stack layer. The vertical routing structure includes a conductive rod and two bonding pads.

5 The conductive rod passes through the stack layer such that the top and bottom surface of the conductive rod are also exposed on the top and bottom surface of the stack layer. In addition, a bonding pad is also attached to the top and bottom surface of the conductive rod respectively. The bonding pads are connected to the aforementioned trace lines. The two bonding pads have a transverse sectional area smaller than the
10 transverse sectional area of the conductive rod. Thus, the vertical routing structure is able to reduce surface area needed to accommodate inter-layer connections and increase routing density within the substrate.